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In depth exploration of drivers of community health workers' performance in maternal and child health services: a multistakeholder perspective from rural Indian setting

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Abstract

Background Community health workers' (CHWs') performance may be affected by several factors interplaying at the systemic level. There is a need to study those factors in the indigenous context to devise strategies for optimising the CHWs' performance. Hence, this study was conducted to understand the individual, health system and community level drivers of CHWs performance in Maternal and Child Health services and to decipher the interactions between CHWs and their stakeholders.

Materials and methods A qualitative inquiry using pragmatic philosophy in a rural setting of Central India (Madhya Pradesh) was conducted. Firstly, relatively low and high performing CHWs were identified, and their stakeholders were selected through purposive sampling. A total of twenty in-depth interviews of CHWs, including their stakeholders, and two focused group discussions with nineteen participants were conducted. Manual thematic analysis was used to summarise the drivers of CHWs' performance. The 4 Cs subjective realistic model was created. The 4Cs of the model stand for the context of the shared responsibility; the clashes experienced by the CHWs (while working with their peers), complications and subsequent coherent measures from the stakeholders' perspective.

Results The drivers of CHWs' performance were broadly constituted by three categories: contextual level, health system level and intrinsic contentment. The contextual factors include transport availability, community behaviour and heterogeneity in population. The determinants of health system were irregular incentives, scarcity of drugs, lack of peers' support, patronage and benefaction. The intrinsic contentment was represented with sense of lack of recognition, family issues and natural causes. As per the realistic model, the clashes were related to network and transport availability, concurrent surveys, irregular incentives and peer support. These clashes led to the incompletion of tasks by CHWs which further resulted in supervisory challenges for the peers. The coherent measures suggested includes strengthening of supportive supervision and availability of regular incentives and transport.

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Conclusion The CHWs' performance was a derivation of inherent context, which was bidirectionally influenced by health systems concerns. The stakeholders' interviews led to in depth understanding of the challenges faced by CHWs thereby adding validity to the qualitative inquiry.

Keywords Primary health care, Community health worker, Health services, Maternal health services

Background

World Health Organization defined "Community health workers (CHWs) as representatives selected by and answerable to the community, they work for with support from the health system with shorter training than professional health workers" [1, 2]. To address the healthcare needs of underserved populations and for resource optimization, a strategic approach involving task-shifting to the lowest level of the healthcare workforce was introduced. Within this context, the role of CHWs gained prominence as a viable solution. In India, the implementation and development of the CHW programme were informed by field-based experiences and proven methodologies from the Comprehensive Rural Health Project (CRHP) in Jamkhed and the Society for Education, Action and Research in Community Health (SEARCH) in the Gadchiroli district. These initiatives played a critical role in shaping the planning, training, and monitoring frameworks of the national CHW strategy [3, 4].

In 2005, India implemented a transformative shift in the delivery of public health interventions by introducing a cadre of CHWs known as Accredited Social Health Activists (ASHAs) [5]. The initiative aimed to deploy one ASHA per village, typically serving a population of approximately 1,000 individuals. The primary responsibility of ASHAs was to facilitate access to essential reproductive, maternal, and child health services, particularly among women and children in rural communities.

The CHW programme in India has a set of supportive structures at the village level through the Village Health Sanitation and Nutrition Committee (VHSNC), the Anganwadi workers (AWWs) and the representation of the gram panchayat. At sub centre level, their peers include Auxiliary nurse midwives (ANMs) and the Multipurpose workers (MPWs) catering 5–6 villages [6]. Activity of ASHAs are supported and guided by the ASHA facilitator [7]. CHWs in India are compensated through a performance-based incentive (PBI) system, wherein remuneration is linked to the specific health-related activities they perform [8]. The structure and scale of these incentives vary across different states of India. In addition to monetary compensation, CHWs also receive non-financial incentives to sustain motivation and engagement. The effectiveness of CHWs has been reflected as improvements in several key indicators reported through the Health Management Information System (HMIS) of India. These include increase in the number of pregnant women registered for antenatal care (ANC), early registration of pregnancies, the proportion of women receiving four or more ANC checkups, and the number of newborns who received all seven Home-Based Newborn Care (HBNC) visits in cases of home deliveries.

A review of existing literature highlights a diverse range of factors such as socio-demographic characteristics, community health system dynamics, and prevailing socio-cultural norms as key determinants influencing the performance of CHWs [9–11]. These contextual variations underscore the need to examine CHWs' performance within local settings. In this regard, it is essential to generate evidence in indigenous contexts, particularly in high-focus regions such as Madhya Pradesh, a central Indian state where this study was undertaken. The present study aims to identify and explore individual, health system, and community-level determinants influencing CHWs' performance. Special attention is given to CHWs categorized as relatively high-performing (RHP) and relatively low-performing (RLP). Furthermore, this study also seeks to examine the nature of interactions between CHWs and their associated stakeholders.

Methods

Study design and settings

This qualitative study based on pragmatic philosophy was conducted in the primary healthcare settings of a rural sub-district (Obedullaganj block) of Madhya Pradesh state (Central India) with a population of 1,76,221 [12]. The latter was declared as high focus state of India due to its unique socio-cultural dynamics along with the geographical peculiarities fostering scope to improve the indicators (in which CHWs share a paramount role). The selected study area comprised of three primary health centres (PHCs), three community health centres (CHCs) and 27 sub-health centres in 2018 catering services to 214 villages. In this study, a pragmatic approach was employed, grounded in the intention to capture the nuanced and dynamic interplay between CHWs and their operational environment, emphasizing their lived experiences and interactions with key stakeholders [13]. By focusing on practical realities, the pragmatic paradigm facilitated the generation of contextually relevant insights that can inform policy and programmatic adaptations. Such an approach is particularly valuable in complex community-based health systems, where variability in implementation and performance is influenced by multiple socio-cultural and systemic factors.

Participants

We had classified CHWs arbitrarily as RHP or RLP based on the incentive received by them in the financial year (2017–2018). This stratification was done to explore the various factors influencing their performance which may or may not differ widely between high and low performing CHWs.Since the population of a village directly influences opportunities to provide services and, in turn, earn incentives, we divided the villages into three groups. Then from each group CHWs were classified as RHP if they had earned more than 75th percentile incentive and RLP if then had earned less than 25th percentile incentive. The rationale for stratification stems from the operational reality that, although CHWs are ideally assigned to a population of approximately 1,000 individuals, in practice, there is often one CHW per village, regardless of the actual population size. This discrepancy introduces variability in CHW workload and community engagement, which can, in turn, influence performance outcomes. To address this heterogeneity and mitigate potential bias, CHWs were classified into tertiles based on the distribution of the population they serve. This stratification allowed for a more equitable comparison across varying contextual settings and ensured that the analysis accounted for both ends of the population spectrum. The schematic representation for this stratification was shown in Fig. 1.

Sampling

There were 10 CHWs each for RHP and RLP categories selected through purposive sampling (extreme/deviant approach) for in depth interviews (IDIs) based on their characteristics like experiences, location, willingness to express their thoughts etc. Stakeholders of these CHWs i.e., 5-community leader (head of village / Sarpanch), their immediate supervisors like 5- Auxiliary Nurse Midwifes, 2-Multipurpose workers, 3-Lady health visitors, 3- Medical Officers and 2- block level officers were selected as they were only few LHVs, MPWs and block level officials for the entire block. Two FGDs with one FGD involving 10 CHWs of RHP and RLP group each were planned.

Data collection procedure

Initially, in-depth interviews (IDIs) were conducted to explore the phenomena, followed by focus group discussions (FGDs) to validate the findings and gather additional insights. The responses from the IDIs were then used to develop relevant probes for stakeholders, allowing further testing and refinement of the concept. IDI and FGD guides were developed in vernacular (Hindi) language and the English language version of the interview guide is shared in Additional file 1. Written informed consent was obtained before each interview / FGDs. Before the commencement of the FGD and IDI, formal introduction about the interviewers including the purpose of the study and the reason for this discussion was explained. There were three interviewers consisting of a facilitator (MM) for further probing and two (RG, AP) interviewers for taking field notes. The response of the participants was audio recorded.

IDIs

Most of the IDIs lasted for at least 20–30 min. Some of the IDIs with Medical officers and block level officials were conducted by (MM, RG) and parallel notes of the responses were taken. IDIs of CHWs were conducted during March to September 2019 and that of other stakeholders between February- March 2020. IDIs were taken until data saturation was achieved.

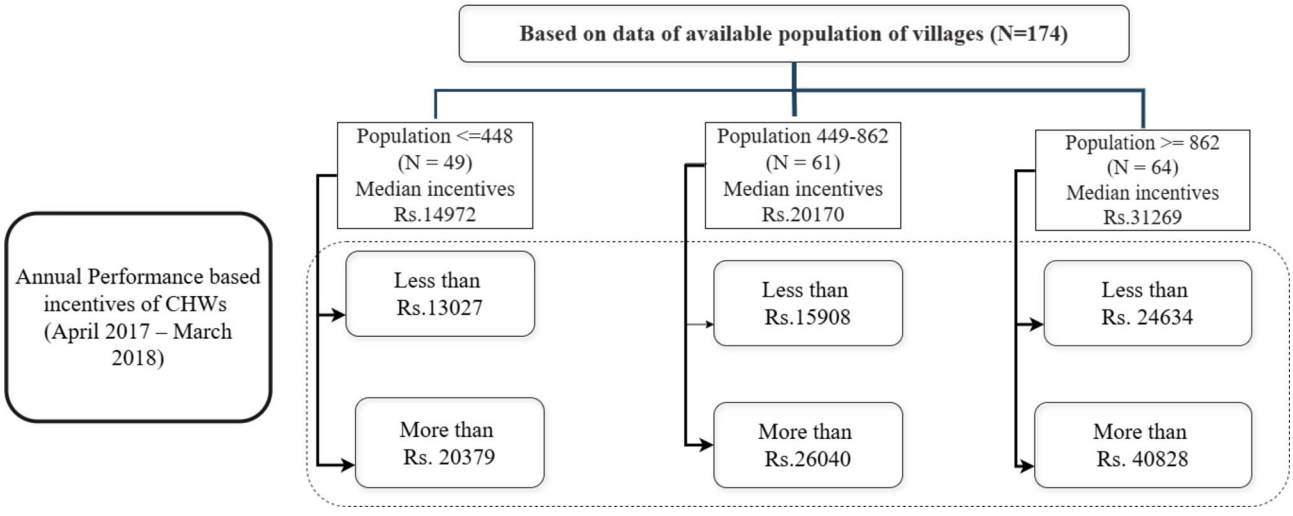

Fig. 1 Schematic representation of the stratification of RHP and RLP CHWs by their PBI and population in the rural Indian setting of our study [14]

FGDs

The FGDs were conducted at the rural block Community health centre following prior notice to the concerned authorities. FGDs were conducted during December 2019– January 2020. Each FGD lasted for 1 to 1.5 h.

Qualitative analysis

Prior to analysis, the data was deidentified and was reviewed through reading of the field notes and active listening of the interview recordings. All the audio-recorded interviews and the handwritten field notes were transcribed and translated from vernacular language to English for further analysis. All the IDIs and FGDs transcripts were read by MM and AP (researcher triangulated) and were organized into easily retrievable sections as per topic guides. Familiarizing the data was done by means of reading and re-reading, making memos and summaries before the commencement of formal analysis. Codes were identified from the IDI transcripts (inductive logic) followed by categorization manually. Phrases, sentences, or paragraphs from IDI transcripts were arranged according to initial categories. The additional information obtained from the FGD and their reasons were arranged as per the retrieved categories from IDIs (deductive logic). A thematic diagram using free online diagram software draw.io [15] was developed to understand the drivers of CHWs' performance linking the various codes across the identified categories [16].

Results

A total of 39 CHWs participated which consisted of 20 IDIs of CHWs (11 from RLP and 9 from RHP) and two FGDs (including 11 RHP CHWs and 8 RLP CHWs). The median (IQR) age of CHWs ($n = 39$) were 31(28–35) years with 21(54%) having completed high school education and above. Also, 25(64%) of CHWs had above or equal to 6 years of working experience as CHW. Majority of 19(49%) CHWs belonged to other background class followed by 6(15%) in General, 8(21%) in Scheduled caste and 6(15%) in Scheduled Tribe categories. About 24(52%) belonged to below poverty line as compared to 15(38%) with above poverty line. All the CHWs were married and Hindu by religion except one CHW. Nearly three fourth 29(74%) had more than four family members residing along with them. However, only 36(92.3%) CHWs had less than two under five children. Out of 20 CHWs, 11 from RLPs and 9 from RHPs participated in the interviews and there was no new information obtained after 7–8 interviews. Also, additional data collected in FGD from 11 RHPs and 8 RLPs did not lead to any new information (Additional file 2).

The major factors identified to influence the CHWs' performance from the RHP and RLP CHWs perspective were summarised under the themes such as contextual factors, health system and the individual factors. Each theme along with their categories are displayed in Fig. 2 where contextual and health system influencers were extrinsic in nature while the third dealt with the intrinsic contentment. The concerns of RHP CHWs were predominantly intrinsic and related to health system challenges. However, those of RLP CHWs were due to lesser opportunities mainly driven by community's response and familial issues. While problems related to non-availability of transport, insufficient incentives and feeling of overburden were common to both RHP and RLP CHWs.

Theme 1- contextual level influencers

The three categories namely remoteness of village, community attitude and behaviour towards the CHWs and population heterogeneity constitutes the contextual level theme.

Remoteness of the village

Few of the CHWs were from the remote villages that had transport difficulties i.e., either non-availability or lack of timely availability of vehicle. This fact led to a lack of fulfilment of assigned tasks, such as the referral of antenatal mothers and sick patients. For instance, there was an incident where home delivery had occurred due to delay in the availability of vehicle in a village as detailed in this verbatim below by RLP CHW,

> *"There was a problem with the referral of antenatal woman for delivery due to the unavailability of XXX public transport vehicle. There was only one vehicle available for transport then, and sometimes even that happened to arrive late". (RLP CHWs, CHC).*
> *"There was one incident where a home delivery happened in our village after we had repeatedly called the XXX public transport vehicle at least 4–5 times. They kept saying that they were coming, and we waited for two hours, during which the delivery happened at home itself. Even we are not paid enough to afford arranging a vehicle and facilitating her to the hospital". (RLP CHWs, PHC).*

Such incidents lead to community dissatisfaction, lack of trust and support by the residents during the time of their survey as evident below,

> *Whenever we conduct village surveys, the residents of the village often tell us that, "You always keep roaming around the village for collecting information for one or the other survey, yet nothing changes for us. You don't have any medicines either, when we approach you for illness-related concerns". (RLP CHWs, CHC).*

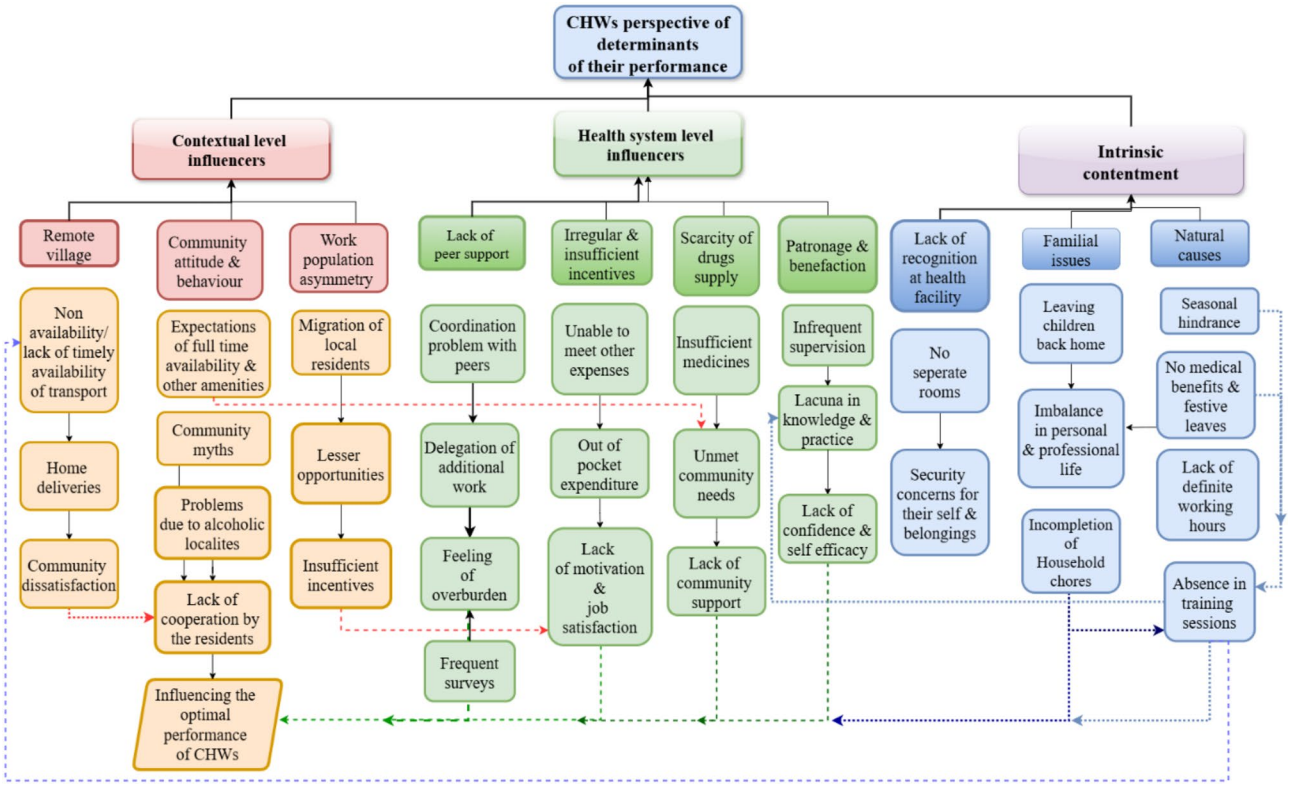

Fig. 2 Thematic framework of determinants of RHP and RLP CHWs' performance from their perspectives in study setting of Madhya Pradesh, India between 2019–2020

One of the Medical Officers confessed that the CHWs get overburdened with so many activities, and they have problems while accompanying ANC cases and referral of sick children due to transport issues.

Community attitude and behaviour towards CHWs

Lack of awareness among the community members was perceived by CHWs as a hindrance to the optimum performance. For example,

> *"Most of the time, it was the mindset of the people that we felt challenging to change. There was an instance when a small child in our village had a fever, and a few people from that area believed it was normal without treating the child. It was difficult to make them understand that it was not so, and appropriate timely action has to be taken". (RLP CHWs, PHC).*

It was also quoted by one of the CHW that there were some localities where problem of alcohol abuse is high because of whom they faced problems like lack of co-operation.

> *There are a few people in our tribal area who consume alcohol and don't choose to listen to us. They often raise their voice against us when we counsel them. Once I had counselled a couple regarding the two-child norms, for which they replied that, "We will have as many children as we want and it is ultimately us who take care of the children." (RLP CHWs, PHC).*

One of the CHWs stated that she faced a major barrier while carrying out her duties due to discriminatory attitudes and behaviour by a few of her villagers.

> *There are people belonging to a particular class XXX, where they hide their newborns saying that, "the evil spirits will curse the child if they bring them out and subsequently will not encourage us to examine them during our home visits." However, they bring their children during the vaccination sessions at Anganwadi" (RLP CHWs, PHC).*

Population heterogeneity

Few CHWs were of the opinion that the amount of work executed by them were not population dependant i.e., they had to execute the same list of tasks as that of the CHWs tackling larger population.

"Whether the village is big or small it doesn't matter, as we need to work in the same way" (RLP CHWs, PHC).

Also, it was quoted that migration of the residents to towns and cities gave rise to a smaller number of beneficiaries (children, eligible couples in the Anganwadi). This emigration further caused a dip in the honorarium as stated below,

"Many people are residing outside the village and I only get to facilitate two deliveries in a year" (RLP CHWs, PHC).

Theme 2- health system level influencers of CHWs performance

Health System related factors tend to predominantly influence the performance of CHWs among all the other themes. The categories are explained in detail as follows.

Irregular and insufficient payment of incentives

CHWs stated that they received irregular and insufficient incentives that indirectly influenced their job satisfaction and thrive to perform better. A few of their concerns were discussed below as verbatims:

We are paid very less no matter what we do. During the meeting we were told that, "this is a social service and there is nothing much to do with incentives". (RHP CHWs, CHC).

Another CHW quoted, **"***We need to get regular incentives so that we stay satisfied with our job as we are leaving household activities for doing this work. We should get the feel that we are paid fair."* (RHP CHWs, PHC).

Due to insufficient incentives, they were unable to meet their transport expenses (as quoted above) during the time of referral or meetings and the photocopies expenditure. They were said to be tackled up to a certain extent by the funds from the "*Arogya Kendra Samiti*" (local committee for pooling funds related to health care activities).

The interaction with the higher official from block level to explore for the delay of payments revealed the delayed claim submission and software problem led to delay in payments. The verbatim of the official is given below:

"Late submission of the proof forms (containing the monthly activities performed) by the CHWs to their supervisors led to accumulation of payments. Secondly, there was technical software issues unlike the system in the past that led to delay in processing payments. There was an issue with the familiarisation, due to launch of this new software. Although there was an initial delay, it has now been rectified and efforts has been made to ensure regular payments since the last few months".

Another official said "*non-availability of funds*" as the reason for delay in payments.

Scarcity of drugs supply

Scarcity of drug supply from their supervisors or health facilities added to their burden.

"We don't get enough medical supplies, yet there are a few people in our village who asks for them in order to provide others. What do we do in such a situation? Every village face unique health challenges yet people don't understand our struggles. Instead, they make fun of us" (RHP CHWs, CHC).

The probable reasons quoted by higher officials were, related to logistics inventory management coupled with lack of human resource and coordination.

Delay in the procurement of the monthly stock by the ANMs from the respective PHC/CHC caused selective dispersal of medicines from the higher health facility i.e. CHC/District hospital as per their availability. It was perceived that the medicines were largely dispensed before expiry by the ANMs. Hence, the provided stock was available for the limited duration of time which further perpetuated the shortage.

"Inadequate human resource in the PHC and lack of co-ordination between the Pharmacist and the ANM were reported to play an important role in the availability of drugs" as said by one of the medical officers.

Patronage and benefaction

Lack of adequate and timely support from their supervisors added to the lacuna in knowledge and their practice. However, few CHWs had quoted that their supervisors were very supportive which gave a mixed picture on supervision.

"There should be more guidance and support from the facilitators. We have no problem in obeying the order of our facilitators, as it is our job to obey the orders. But some of us receive only less assistance" (RHP CHW, PHC).
One of them commented as "their CHW facilitator XXX helps them, but our facilitator YYY has barely shown up in the field over the last two months" (RLP CHW, PHC).
Our facilitator is very good and helps in almost everything. If I indulge in mobilising the patients,

then she even takes care of documentation work. She provides good support in maintaining our registers (RHP CHW, CHC).

Lack of peer support

Due to lack of proper dissemination of duties among the peer groups (ANM, CHW facilitator, AWW), there was lack of co-ordination while executing activities like immunisation and perhaps has raised the work burden over the CHWs.

"Whatever work Anganwadi worker or ANM receive, they will push it towards us. This adds on to our additional pressure" (RHP CHWs, PHC).

Theme 3-Intrinsic contentment of CHWs performance

Lack of recognition from the health facility

It has been widely observed that when CHWs accompany antenatal cases, no separate rooms were there for them, so they had to wait outside for hours that accounted for security concerns especially during night.

"We are not provided anything in hospitals when we accompany the antenatal mothers for institutional delivery. We keep moving from one place to other as we don't have a proper space of our own where we can work, sit, eat and sleep. In those instances, we keep waiting outside exposing us to mosquito bites" (RHP CHWs, CHC).

The peers generally state that, "She has job and she will do the job and earn name for herself. But in reality, we neither benefit from name nor money." We receive incentives for the tasks we do" (RHP CHWs, PHC)

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Familial issues

Certain factors like no definite working hours have been widely quoted by large number of CHWs that there was no adequate family support especially among those who had Under five children during festival times.

"Whether we are sick or not it does not matter. If we are asked to be somewhere at 8:00 pm, we generally have no choice but to go only" (RHP CHWs, CHC).

"The real challenge lies when we need to leave small children at home and go for work. Our family members also have an issue adjusting with the household duties as there is no definite working hours" (RHP CHWs, CHC).

Natural causes

There were reported circumstances like working during rainy seasons which hampered their service delivery. Also, there were no provision of medical benefits especially during illness and other conditions like pregnancy, lactation period which added on to their dissatisfaction towards the job.

"Even if it is Diwali (celebration time) or flooding in the roads or extremely cold weather still, we have to go whenever there is a necessity in the village and that's why we are working as CHWs" (RHP CHWs, CHC).

"Irrespective of circumstances such as pregnancy, breast feeding and menstruation, ASHA has to go if she is called for" (RHP CHWs, PHC)..

The 4Cs triangular subjective realistic model

The "*4Cs triangular Subjective realistic model*" was developed that summarises the real-life experiences from the interactions between the CHWs and their peers from the perspectives of the stakeholders. This model explains the complex interactions from the context i.e., active partnership experiences shared between CHWs and the peers. Clashes refers to those problems which were faced by the peer groups while working with the CHWs which had caused complications that required extra efforts from either of them for accomplishing the assigned tasks. Coherence refers to those active measures that could be taken in future to improve their co-ordination and ultimately the performance of CHWs as suggested by the ANMs, LHVs and the MPWs.

The context refers to those activities which were shared by the CHWs with the peers like ANM, LHV and the MPWs as shown in Table 1. The clashes that were encountered were summarized in Table 2 below with the complications that occurred simultaneously and the corrective steps that were suggested.

CHWs' performance from the perspective of village leaders

One of them felt that "the CHWs' performance was good and they had no issues coordinating with them except for the fact that they had issues while they had to refer the patients to higher health facilities". (Village head, RLP CHWs)

Another added that, "her communication skills were good and so simple that the village people could understand it better". (Village head, RHP CHWs)

When questioned on her attitude to work one of them replied as, "*it is a permanent government job. Also, it is a social service and their knowledge improves as they work.*

Table 1 Nature of activities performed by CHWs in association with the peer groups in Madhya Pradesh, India between 2019–2020

Nature of tasks	List of activities	Peers involved
Immunization service delivery	Preparation of due list.	ANM
	Community mobilization during the time of session.	
	Documentation while delivering immunisation services.	
Maternal Health services delivery	Home visit following delivery of child.	Mainly accomplished by CHWs alongside the ANM, supervised by the LHV.
	Counselling of Antenatal mothers.	
	Blood tests during the pregnancy.	
	Measuring weight of ANC cases.	
	Identifying the ANC Cases and facilitating their registration.	
	In mobilising ANC cases during delivery.	
Family planning services	Community mobilisation to seek family planning service from the health facility.	
	Counselling regarding the family planning options.	
Record based services	Demographic survey of the village	ANM
	Record entries	
Child health	Referral of Severe acute malnutrition child to the Nutrition Rehabilitation Centre with the help of CHWs.	ANM
Disease control activities	In preparing slides for the malaria case suspect.	MPW
	Accompanying during house-to-house larval survey	

Hence, ASHAs had volunteered for this job". (Village head, RHP CHWs)

All the five village leaders had suggested that additional training should be given with provisions for regular salary. Also, transport arrangements must be ensured to improve their performance.

Discussion

Our study highlighted the complex interplay of factors that influence the performance of CHWs in India. The major determinants of their performance were broadly classified as extrinsic contentment that included the contextual, health system influencers and intrinsic contentment. This approach was adapted from the methodological framework employed in a study by Gopalan et al. [17], which investigated performance-related determinants among community health workers (CHWs). One of the critical barriers identified in the current study, consistent with previous literature, was the issue of transportation. Transport-related challenge has been cited in the context of CHW service delivery, particularly in geographically remote or underserved regions by Kok et al. [18]. Also, other studies have emphasized the impact of difficult terrain and poor road infrastructure on health service accessibility [19–23]. Such conditions often hinder the timely availability and utilization of transport services, thereby affecting the CHWs' ability to make household visits, attend health facilities, or mobilize beneficiaries to outreach sessions.

In addition to transportation constraints, this study identified poor network connectivity in remote villages as a significant operational challenge. This limitation has critical implications for CHWs' performance, as mobile phones serve as a central tool for real-time data entry, communication with supervisors, and coordination of services during VHNDs. Given the increasing reliance on mobile-based digital platforms for health information systems and service delivery, uninterrupted access to mobile networks is essential for ensuring timely and accurate documentation, follow-ups, and service facilitation. These contextual barriers underline the importance of infrastructure improvements and targeted policy interventions to strengthen CHW support systems, particularly in geographically and digitally underserved settings.

The gaps in community awareness and the persistence of certain sociocultural beliefs identified in our study may be effectively addressed through the cultural familiarity and shared lived experiences of CHWs within their communities. This intrinsic alignment between CHWs and community members enables them to communicate the benefits and relevance of health services in a contextually appropriate manner that resonates with local values, norms, and belief systems. The pivotal role of community participation and social support in overcoming barriers to the acceptance and utilization of health services is well-documented in the literature [1, 24–27]. For instance, initiatives such as participatory audits of public health services in Maharashtra and the establishment of community information hubs in Gujarat exemplify community-led accountability mechanisms and empowerment processes that foster greater trust in the health system [28]. These interventions not only enhance transparency and responsiveness but also reinforce the credibility of CHWs. Embedding CHWs within

Table 2 Summarizing the clashes, complications, and coherence between CHWs and their peers in study setting of Madhya Pradesh, India between 2019–2020

Clashes	Complications	Coherence
It was widely found that CHWs don't report as per her schedule. *"She doesn't report as per the time table…. she has a small child because of which she won't be able to leave the child alone".* (ANM, PHC) Transport issues also contribute to her absence at times. For instance, it is said by one of the ANM that, "*There is no provision of vehicle from that place to our hospital."* (ANM, PHC)	It was confessed by one of the ANM as *"we need to do repeated phone calls and remind her of the task". (ANM respondent 2, CHC) which was also said by (MPW respondent 2, CHC)* Incompletion of tasks. *(ANM, CHC)* Such lack of transport leads to inadequate supervision as confessed by the ANM in the following, *"At some remote villages, CHWs supervisor don't visit the field". (ANM, CHC)*	"*We need to keep meeting for the mother in laws and make them understand the nature and tasks of CHWs to build relation between both."* (ANM, CHC) "At the foremost, transport facilities should be arranged" as said by (ANM, PHC) & (LHV, CHC)
Most of them face network issues in hard-to-reach areas as quoted by ANM as, "*At remote village, it is difficult to contact the CHWs due to no network*". (ANM, PHC)	Direct visit to areas with network and transport issues by the ANMs. *(ANM, CHC)*	
CHWs were said to have been overburdened to complete the surveys related to different health programmes at same period.	*She does not complete the tasks of her previous assigned programme before which she is assigned new tasks leading to incompletion of previous ones. (ANM, PHC)*	**"**Assign limited tasks". (ANM respondent 2, PHC). "*Infographics for the community and the communication kit should be made available to the CHWs*". (ANM, PHC).
The common problem quoted by all the peers were irregular incentives to CHWs. It was said that *"CHWs don't receive incentives regularly. Anyone does work for the sake of money, right?". (ANM, PHC)*	"*They are not motivated to work". (ANM, CHC)*	*"Regular and timely incentives should be provided so that they can do their activities with at most satisfaction." (ANM, PHC &CHC) "We need to motivate them".* (MPW, PHC) Incentive should be increased to improve their motivation and get the work done at right time. (LHV, CHC)
"*CHW's performance was influenced to some extent by her qualifications". (ANM, PHC)*	Difficulty in making them understand the stuffs. At times it leads to communication gap between her and the people who seek her help.	Enabling ASHAs to understand by kind gesture. Addressal of their queries in meeting. Selection of educated ASHAs (LHV, CHC). "*There should be more training so that their performance can be improved".* (ANM respondent, CHC) Meeting should be held at village level. One of the MPW suggested that "*they should receive more training". (MPW, PHC)*
Inadequate Support by the peers was quoted as major hindrance by one of the LHV as *"That village has a lot of problems. Some people seek care from private hospitals saying that she is a small level worker. What much she can do? Additionally, her peers also don't support her much".* (LHV, CHC)	Affects the overall service delivery leading to attrition from their jobs. (LHV, CHC)	Support by peers was recommended by both the LHVs.
One of the LHV has said, "*there are lot of migrants from that particular village and that none of the natives from the village had volunteered for CHW post for some time now".* (LHV, CHC)	Because of which there is shortfall in registration during VHND days. She even quoted as *"What can CHW do for this?".*	

such participatory structures can further optimize their performance by enhancing their legitimacy, improving communication pathways, and fostering collective responsibility for health.

Several extrinsic factors influencing CHWs' performance, identified in our study, present opportunities for systemic modifications and case-specific interventions. For instance, safety concerns reported by CHWs particularly when accompanying clients during late hours without access to a dedicated vehicle or secure infrastructure highlight a pressing need for improvements at the level of First Referral Units (FRUs). Provision of transport facilities and designated rooms for maternal and emergency care within FRUs can help alleviate these challenges.

A prominent source of demotivation among CHWs was the irregularity of performance-based incentives and frequent stock-outs of essential medicines. These findings align with earlier studies documenting similar issues across various settings [18, 19, 27, 29, 30]. In our context, delays in incentive disbursement were often linked to late submission of documentation and technical difficulties associated with transitioning to new digital reporting platforms. These operational challenges suggest the need for enhanced technical support and streamlined workflows at the CHW supervisor and sub-district administrative levels. Moreover, it underscores the importance of aligning incentives with the time and effort invested by CHWs, adjusted for contextual variations in workload.

The problem of drug shortages, on the other hand, was largely attributed to gaps in procurement logistics, inventory management, and accountability structures, which varied across districts. Addressing these systemic inefficiencies through improved supply chain oversight and decentralized stock monitoring may improve service delivery consistency.

Another noteworthy finding was the burden imposed by concurrent health surveys and vertical programs, contributing to CHW fatigue and dissatisfaction. This observation echoes findings from Oliveira et al. [31], who reported that fragmented program implementation can undermine CHW efficiency and morale. To mitigate such stressors, fostering psychological resilience through structured peer support, mentorship programs, and stronger interpersonal relationships within the health workforce is essential [32].

Intrinsic factors also played a significant role in influencing the performance of CHWs. Notably, family support emerged as a strong motivating factor, as acknowledged both by CHWs themselves and by their stakeholders. Most CHWs in our study were married and had children, which contributed to a sense of responsibility and personal connection to maternal and child health issues. These findings are consistent with those reported by Tripathy et al. [11] and Sarin et al. [33], who highlighted familial backing as a cornerstone of CHW motivation and community engagement.

Educational attainment was another factor perceived by peers and supervisors to critically influence CHWs' performance, particularly in administrative responsibilities such as maintaining records and using digital reporting systems. Previous studies have also linked higher educational levels with improved performance among CHWs [9, 34]. However, the lack of formal education does not necessarily preclude effectiveness; this gap can be addressed through regular, targeted training and a supportive supervisory environment. Such measures may enhance CHW competence, foster community trust, and ultimately improve health-seeking behaviour among beneficiaries, as suggested by Glenton et al. [30].

An additional context-specific barrier identified through interviews with Lady Health Visitors (LHVs) was population migration, which resulted in a reduced number of beneficiaries and reluctance among community members to take up CHW roles. This phenomenon, driven by rapid urbanization, presents a challenge for sustaining the CHW workforce, especially when incentives are directly tied to service uptake and population coverage.

Our parallel publications have examined other influencing factors that differentiate RHP CHWs from RLPs, including socio-demographic characteristics, training quality, knowledge and skill levels, availability of drugs and equipment, intrinsic motivation, job satisfaction, and the nature and frequency of supportive supervision [14, 35, 36]. These findings collectively underscore the multifaceted determinants of CHW performance and point toward targeted strategies for workforce strengthening in similar settings.

Strengths and limitations of the study

- Comprehensive incorporation of the stakeholders from the village up to block level, using a combination of qualitative inquiry techniques were undertaken.
- The interpretation achieved from IDIs were validated subsequently in FGD from a classic approach and the ability to consider a wide spectrum of factors can be considered as strength of the study.
- The hierarchy of inherent power dynamics among the stakeholders and difficulty to ensure spillage of responses due to transection communication added to the limitation.

Recommendations

Regular stakeholder meetings should emphasise shared responsibilities and promote structured conflict resolution mechanisms to foster a supportive work

environment for Community Health Workers (CHWs). Such engagement can enhance inter-professional collaboration and improve CHW integration within the health system. Furthermore, the development of equitable incentive structures is essential. Existing performance-based models may not adequately reflect workload variations arising from population size, task complexity, and geographic constraints. Therefore, modeling approaches, such as time-motion studies, should be employed to assess task-specific demands and optimize incentive frameworks accordingly. These efforts can contribute to improved motivation, job satisfaction, and retention of CHWs, ultimately strengthening community-level service delivery and health outcomes.

Conclusion

The performance of Community Health Workers (CHWs) is shaped by a dynamic interplay of intrinsic and extrinsic factors that influence each other bidirectionally. Understanding these drivers and systematically addressing the associated challenges ranging from logistical and infrastructural barriers to motivational and socio-cultural influences is essential for enhancing their effectiveness. Strengthening these determinants can contribute to the sustained engagement and improved performance of CHWs, thereby advancing the quality and reach of community-based healthcare services.

Abbreviations

ASHAs	Accredited Social Health Activists
ANMs	Auxiliary nurse midwifes
AWWs	Anganwadi workers (AWWs)
CHC	Community Health Centre
CHWs	Community Health workers
FGD	Focussed group discussion
IDI	In depth interviews
IQR	Interquartile range
MPWs	Multipurpose workers
NHM	National Health Mission
PBI	Performance based incentives
PHC	Primary Health Centre
RHP	Relatively High Performing
RLP	Relatively Low Performing
VHSNC	Village Health Sanitation and Nutrition Committee

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s12875-025-02851-9.

Additional file 1 - Qualitative questionnaire probes to the CHWs and their stakeholders.

Additional file 2- Codebook of RHP and RLP CHWs.

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Author contributions

Concepts: RG, APP, AJ; Design: RG, APP, AJ; Definition of intellectual content: RG, APP, AJ; Literature Search: RG, APP; Data acquisition: RG, MM, AP, Data analysis: RG, MM, AP, APP, AJ; Statistical analysis: RG, APP, AJ; Manuscript Preparation: RG, MM, AP, APP, AJ; Manuscript editing and review: RG, APP, AJ; Guarantor: RG, APP, AJ.

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Data availability

Data in the form of anonymised transcripts are available upon reasonable request to the corresponding author.

Declarations

Ethical approval and consent to participate

This study protocol was reviewed and approved by Institutional Human Ethics Committee of our tertiary teaching premiere institute of National Importance (IHEC-LOP/2018/MD0027) in accordance with the ICMR National Ethical guidelines for Biomedical and Health Research involving the human participants 2017. Permissions were also obtained from sub district level officials for data retrieval as well as for stakeholder interviews.

Consent for publication

Permission was obtained from all the study participants during the conduct of the study as per the institute format in vernacular language.

Author's credibility

Authors AJ and RG had undergone qualitative training and have published qualitative research works. Also, they are indulged as resource person in qualitative workshop for healthcare professionals.

Competing interests

The authors declare no competing interests.

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References

1. World Health Organization. What Do We Know About Community Health Workers? a Systematic Review of Existing Reviews [Internet]. Vol. 17, Human Resources for Health Observer Series no 19. 2020. 88 p. Available from: https://www.who.int/publications/i/item/what-do-we-know-about-community-health-workers-a-systematic-review-of-existing-reviews
2. Naimoli JF, Perry HB, Townsend JW, Frymus DE, McCaffery JA. Strategic partnering to improve community health worker programming and performance: Features of a community-health system integrated approach. Hum Resour Health [Internet]. 2015 Sep 1 [cited 2025 Apr 20];13(1):1–13. Available from: https://human-resources-health.biomedcentral.com/articles/https://doi.org/10.1186/s12960-015-0041-3
3. World Health Organization. WHO guideline on health policy and system support to optimize community health worker programmes [Internet]. 2018

[cited 2025 Apr 20]. p. 112. Available from: https://iris.who.int/handle/10665/275474
4. Bhatia K. Community health worker programs in India: a rights-based review. Perspect Public Health [Internet]. 2014 [cited 2025 Apr 20];134(5):276–82. Available from: https://pubmed.ncbi.nlm.nih.gov/25169614/
5. Maru RM. The community health volunteer scheme in India: an evaluation. Soc Sci Med [Internet]. 1983 [cited 2025 Apr 20];17(19):1477–83. Available from: https://pubmed.ncbi.nlm.nih.gov/6635711/
6. National Health Mission. Flow Chart:: Support Mechanism for ASHA [Internet]. [cited 2025 Apr 20]. Available from: https://nhm.gov.in/index1.php?lang=1%26level=3%26sublinkid=181%26lid=254
7. National Rural Health Mission. Guidelines for Community Processes [Internet]. 2013 [cited 2025 Apr 20]. Available from: https://nhm.gov.in/images/pdf/communitisation/asha/Orders-Guidelines/Guidelines_for_Community_Processes_2014_English.pdf
8. Wang H, Juyal RK, Miner SA. Performance-Based payment system for ASHAs in India. What Does International Experience Tell Us?; 2012.
9. Kok MC, Dieleman M, Taegtmeyer M, Broerse JEW, Kane SS, Ormel H et al. Which intervention design factors influence performance of community health workers in low- and middle-income countries? A systematic review. Health Policy Plan [Internet]. 2014 Nov 1 [cited 2025 Apr 20];30(9):1207. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC4597042/
10. Sharma R, Webster P, Bhattacharyya S. Factors affecting the performance of community health workers in India: a multi-stakeholder perspective. Glob Health Action [Internet]. 2014 [cited 2025 Apr 20];7(1). Available from: https://pubmed.ncbi.nlm.nih.gov/25319596/
11. Tripathy JP, Goel S, Kumar AMV. Measuring and understanding motivation among community health workers in rural health facilities in India-a mixed method study. BMC Health Serv Res [Internet]. 2016 Aug 9 [cited 2025 Apr 20];16(1):1–10. Available from: https://bmchealthservres.biomedcentral.com/articles/https://doi.org/10.1186/s12913-016-1614-0
12. Home| Government of India [Internet]. [cited 2025 Apr 20]. Available from: https://censusindia.gov.in/census.website/
13. Kaushik V, Walsh CA, Pragmatism as a Research Paradigm and Its Implications for Social Work Research. Soc Sci. 2019, Vol 8, Page 255 [Internet]. 2019 Sep 6 [cited 2025 Apr 20];8(9):255. Available from: https://www.mdpi.com/2076-0760/8/9/255/htm
14. Revadi G, Joshi A, Pakhare AP. An Exploration of Attributes Effecting the Relationship between Competencies and Performance of CHWs in a Rural Block of Central India. Int J Med Public Heal [Internet]. 2022;12(2):65–70. Available from: http://www.ijmedph.org/v12/i2
15. draw.io [Internet]. [cited 2025 Apr 20]. Available from: https://app.diagrams.net/
16. Green J, Browne J. Principles of Social Research (Understanding Public Health) [Internet]. Open University Press; 2005 [cited 2025 Apr 20]. 184 p. Available from: https://books.google.com/books/about/Principles_Of_Social_Research.html?id=Dc_sAAAAQBAJ
17. Gopalan SS, Mohanty S, Das A. Assessing community health workers' performance motivation: a mixed-methods approach on India's Accredited Social Health Activists (ASHA) programme. BMJ Open [Internet]. 2012 [cited 2025 Apr 20];2(5). Available from: https://pubmed.ncbi.nlm.nih.gov/23019208/
18. Kok MC, Muula AS. Motivation and job satisfaction of Health Surveillance Assistants in Mwanza, Malawi: an explorative study. Malawi Med J [Internet]. 2013 [cited 2025 Apr 20];25(1):5. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC3653191/
19. Kok MC, Kane SS, Tulloch O, Ormel H, Theobald S, Dieleman M, et al. How does context influence performance of community health workers in low- and middle-income countries? Evidence from the literature. Heal Res Policy Syst [Internet]. 2015 Mar 7 [cited 2025 Apr 20];13(1):1–14. Available from: https://health-policy-systems.biomedcentral.com/articles/10.1186/s12961-015-0001-3
20. Teela KC, Mullany LC, Lee CI, Poh E, Paw P, Masenior N, et al. Community-based delivery of maternal care in conflict-affected areas of eastern Burma: perspectives from lay maternal health workers. Soc Sci Med [Internet]. 2009 Apr [cited 2025 Apr 20];68(7):1332–40. Available from: https://pubmed.ncbi.nlm.nih.gov/19232808/
21. Campbell C, Nair Y, Maimane S, Gibbs A. Hearing community voices: grassroots perceptions of an intervention to support health volunteers in South Africa. SAHARA J J Soc Asp HIV/AIDS Res Alliance [Internet]. 2008 Dec 1 [cited 2025 Apr 20];5(4):162–77. Available from: https://pubmed.ncbi.nlm.nih.gov/19194598/
22. Razee H, Whittaker M, Jayasuriya R, Yap L, Brentnall L. Listening to the rural health workers in Papua New Guinea - the social factors that influence their motivation to work. Soc Sci Med [Internet]. 2012 Sep [cited 2025 Apr 20];75(5):828–35. Available from: https://pubmed.ncbi.nlm.nih.gov/22632846/
23. Ye-Ebiyo Y, Kitaw Y, G/Yohannes A, Girma S, Desta H, Seyoum A, et al. Study on Health Extension Workers: Access to Information, Continuing Education and Reference Materials. Ethiop J Heal Dev [Internet]. 2007 Apr 15 [cited 2025 Apr 20];21(3). Available from: https://www.ajol.info/index.php/ejhd/article/view/10054
24. McPherson RA, Tamang J, Hodgins S, Pathak LR, Silwal RC, Baqui AH, et al. Process evaluation of a community-based intervention promoting multiple maternal and neonatal care practices in rural Nepal. BMC Pregnancy Childbirth [Internet]. 2010 Jun 7 [cited 2025 Apr 20];10(1):1–15. Available from: https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/1471-2393-10-3
25. Medhanyie A, Spigt M, Kifle Y, Schaay N, Sanders D, Blanco R, et al. The role of health extension workers in improving utilization of maternal health services in rural areas in Ethiopia: a cross sectional study. BMC Health Serv Res [Internet]. 2012 [cited 2025 Apr 20];12(1). Available from: https://pubmed.ncbi.nlm.nih.gov/23043288/
26. Scott K, Shanker S. Tying their hands? Institutional obstacles to the success of the ASHA community health worker programme in rural north India. AIDS Care [Internet]. 2010 [cited 2025 Apr 20];22 Suppl 2(SUPPL. 2):1606–12. Available from: https://pubmed.ncbi.nlm.nih.gov/21161765/
27. Crispin N, Wamae A, Ndirangu M, Wamalwa D, Wangalwa G, Watako P, et al. Effects of Selected Socio-Demographic Characteristics of Community Health Workers on Performance of Home Visits during Pregnancy: A Cross-Sectional Study in Busia District, Kenya. Glob J Health Sci [Internet]. 2012 Jul 26 [cited 2025 Apr 20];4(5):p78. Available from: https://ccsenet.org/journal/index.php/gjhs/article/view/17085
28. Lahariya C, Roy B, Shukla A, Chatterjee M, De Graeve H, Jhalani M, et al. Community action for health in India: evolution, lessons learnt and ways forward to achieve universal health coverage. WHO South-East Asia J public Heal [Internet]. 2020 Apr 1 [cited 2025 Apr 20];9(1):82–91. https://pubmed.ncbi.nlm.nih.gov/32341227/
29. Saprii L, Richards E, Kokho P, Theobald S. Community health workers in rural India: Analysing the opportunities and challenges Accredited Social Health Activists (ASHAs) face in realising their multiple roles. Hum Resour Health [Internet]. 2015 Dec 9 [cited 2025 Apr 20];13(1):1–13. Available from: https://human-resources-health.biomedcentral.com/articles/10.1186/s12960-015-0094-3
30. Glenton C, Colvin CJ, Carlsen B, Swartz A, Lewin S, Noyes J, et al. Barriers and facilitators to the implementation of lay health worker programmes to improve access to maternal and child health: qualitative evidence synthesis. Cochrane database Syst Rev [Internet]. 2013 Oct 8 [cited 2025 Apr 20];2013(10). Available from: https://pubmed.ncbi.nlm.nih.gov/24101553/
31. Oliveira-Cruz V, Kurowski C, Mills A. Delivery of priority health services: searching for synergies within the vertical versus horizontal debate. J Int Dev [Internet]. 2003 Jan 1 [cited 2025 Apr 20];15(1):67–86. Available from: https://onlinelibrary.wiley.com/doi/full/10.1002/jid.966
32. Dhillon PK, Das S. Psychological Resilience of Frontline Healthcare Workers in India: A Mixed-Methods Exploratory Study during COVID-19 Pandemic in India. Prev Med Res & Rev [Internet]. 2024 Mar 26 [cited 2025 Apr 20];1(3):121–4. Available from: https://discovery.researcher.life/article/psychological-resilience-of-frontline-healthcare-workers-in-india-a-mixed-methods-exploratory-study-during-covid-19-pandemic-in-india/a9e4cf7f30903549bcc82a2eabbaa16d
33. Sarin E, Lunsford SS. How female community health workers navigate work challenges and why there are still gaps in their performance: A look at female community health workers in maternal and child health in two Indian districts through a reciprocal determinism framework. Hum Resour Health [Internet]. 2017 Jul 1 [cited 2025 Apr 20];15(1):1–10. Available from: https://human-resources-health.biomedcentral.com/articles/10.1186/s12960-017-0222-3
34. Alam K, Oliveras E. Retention of female volunteer community health workers in Dhaka urban slums: A prospective cohort study. Hum Resour Health [Internet]. 2014 May 20 [cited 2025 Apr 20];12(1):1–11. Available from: https://human-resources-health.biomedcentral.com/articles/10.1186/1478-4491-12-29
35. Revadi G, Joshi A, Pakhare AP. A Mixed Method Study on Supportive Supervision of Community Health Workers From Central India. Indian J Community

Med [Internet]. 2025 Jan [cited 2025 Apr 20];50(1):119–25. Available from: https://pubmed.ncbi.nlm.nih.gov/40124812/

36. Revadi G, Baravakar J, Kumar A, Joshi A, Pakhare AP. Development of a Tool for the Assessment of Job Satisfaction amongst the Community Health Workers. Prev Med Res Rev [Internet]. 2024 Nov 23 [cited 2025 Apr 20]; Available from: https://journals.lww.com/pmrr/fulltext/2024/01060/development_of_a_tool_for_the_assessment_of_job.7.aspx

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